IHME

Measuring what matters

Disability Weights

Burden EU webinar

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GBD2010 DW Measurement Study components

Population-based household surveys in 5 primary sites, focusing on paired comparison questions for 108 chronic health states

- Face-to-face interviews in Tanzania, Bangladesh, Indonesia, Peru
- Telephone interview in random sample of US households

Open-access Internet surveys including all 220 health states, and using multiple measurement methods

- Available in English, Spanish and Mandarin
- Key objectives were to fill in gaps with remaining health states and to anchor scale for paired comparison responses

Measurement methods: paired comparisons

Primary mode of eliciting responses is paired comparison

- Respondents hear (or read) two descriptions of hypothetical people, each with a randomly selected condition
- Respondents indicate *which person is healthier*

Paired comparison questions chosen for relative ease of comprehension, administration and analysis

- Literacy and numeracy not essential
- Appealing intuitive basis and established strategies for analysis

Framing paired comparisons

Basis for all comparisons are *lay descriptions* of health states, which highlight major *functional consequences and symptoms* associated with each

- Must be brief: restricted to <30 words based on pretest results
- Must use simple, non-clinical vocabulary

Introduction to paired comparison questions orients respondents to focus on functioning

A person's health may limit how well parts of his body or his mind work. As a result, some people are not able to do all of the things in life that others may do, and some people are more severely limited than others.

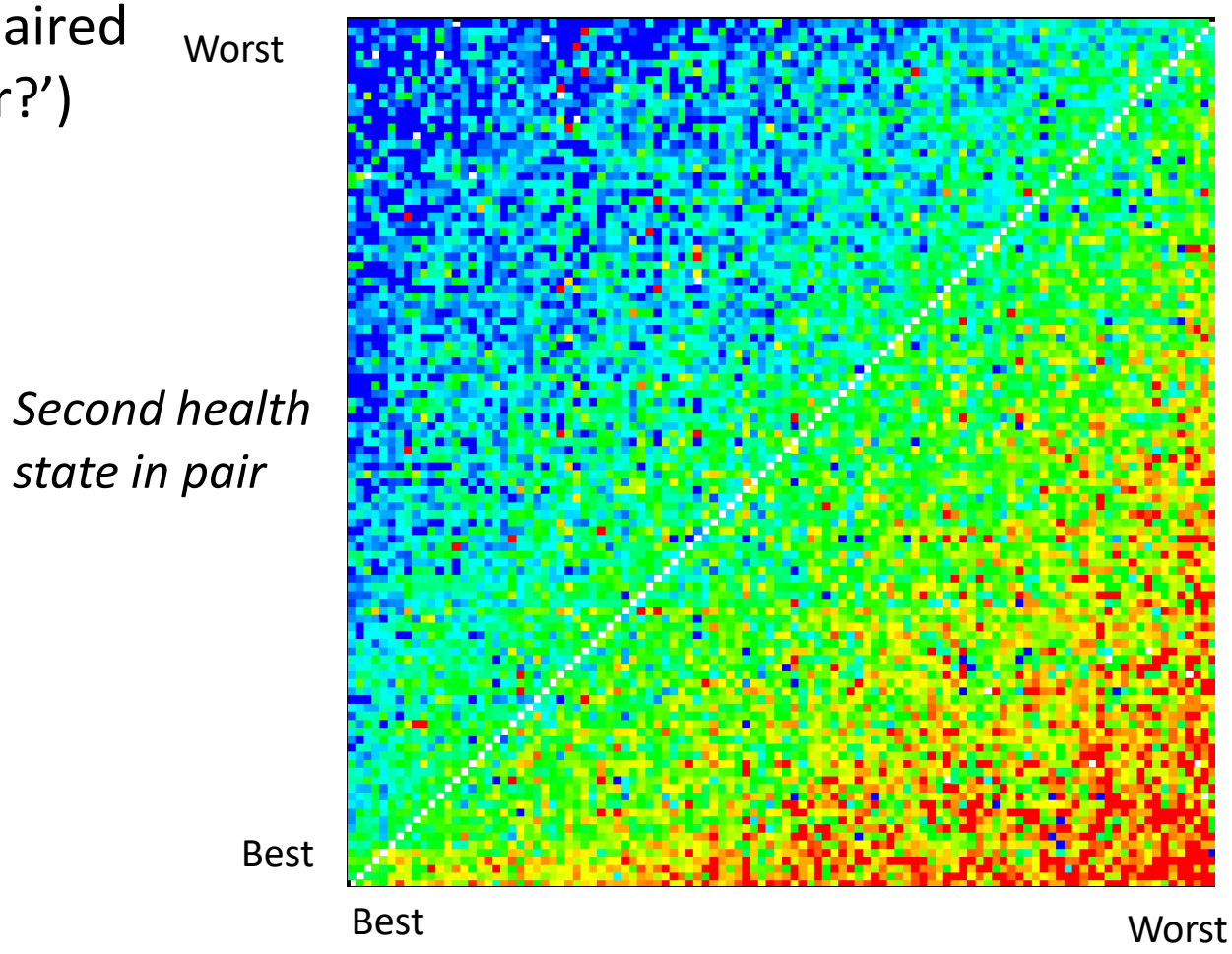
I am going to ask you a series of questions about different health problems. In each question I will describe two different people … Imagine they have the same number of years left to live, and will experience the health problems that I describe for the rest of their lives. I will ask you to tell me which person you think is healthier overall, in terms of having fewer physical or mental limitations on what they can do in life…

EURO DW surveys

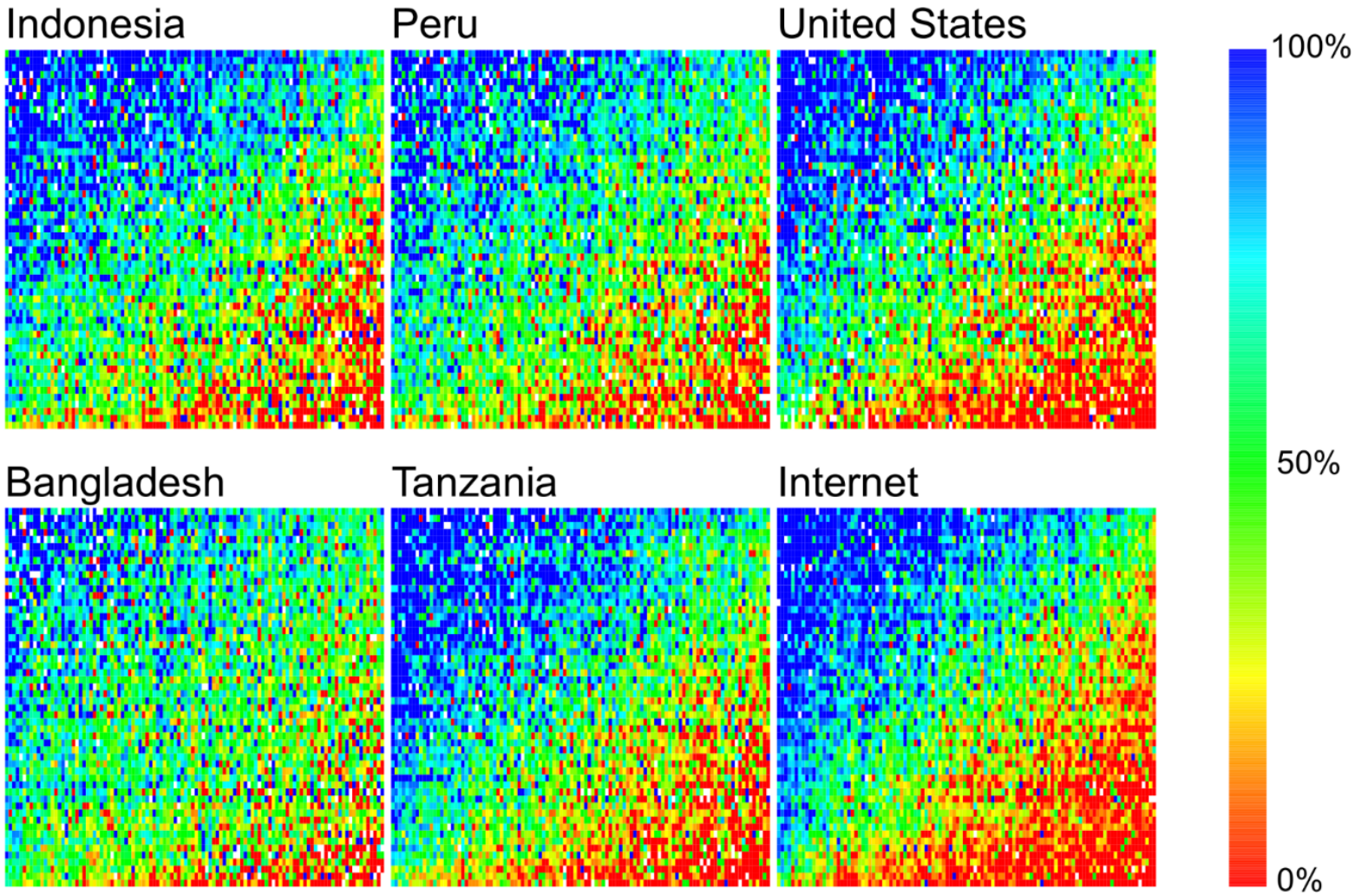
- 172/220 overlap with GBD health states
- new health states
  - Sinusitis, hay fever, varicose veins, shoulder problems, ICU admission
- modified lay descriptions
  - Spinal cord lesion: add incontinence
  - Hearing loss: improving wording consistency between levels and addition of worry due to social isolation

Analysis

Probabilities of responses on paired comparisons ('Who is healthier?') summarized in heat maps.



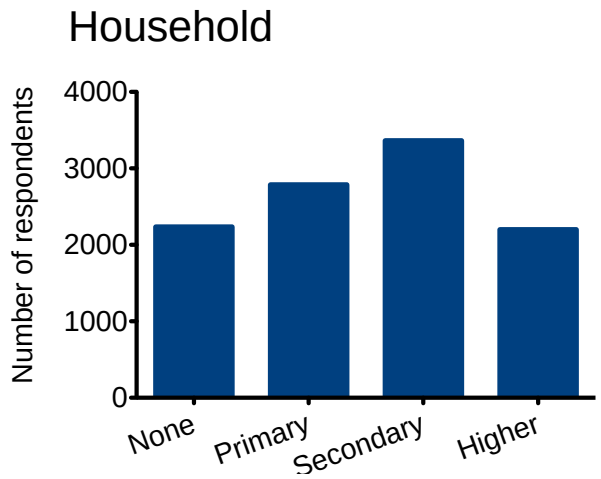
Results: paired comparisons across surveys

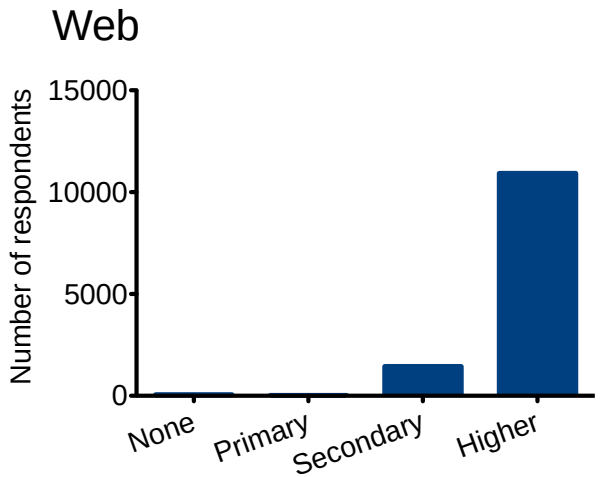


Results: comparison of household and web surveys

- Web respondents comprise non-random, highly educated, self-selected sample

Educational attainment in HH & web samples

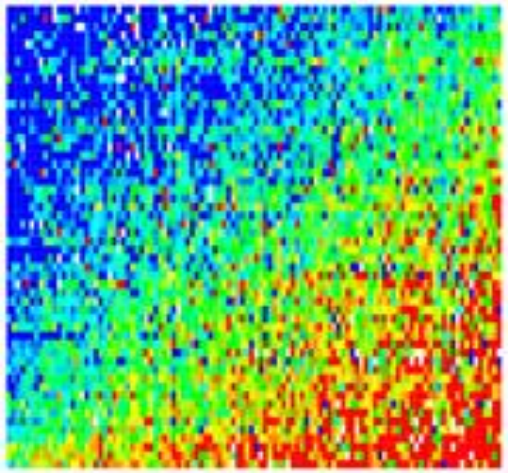




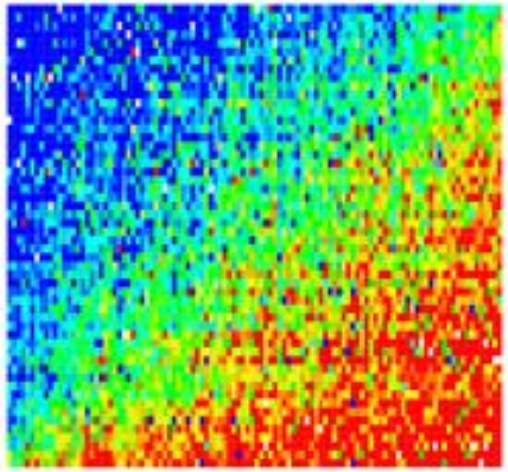
Results: comparison of household and web surveys

- Web respondents comprise non-random, highly educated, self-selected sample
- But, response probabilities are virtually indistinguishable from those in household surveys
- And estimated weights from probit regressions are very highly correlated

Tanzania (N=2,604)



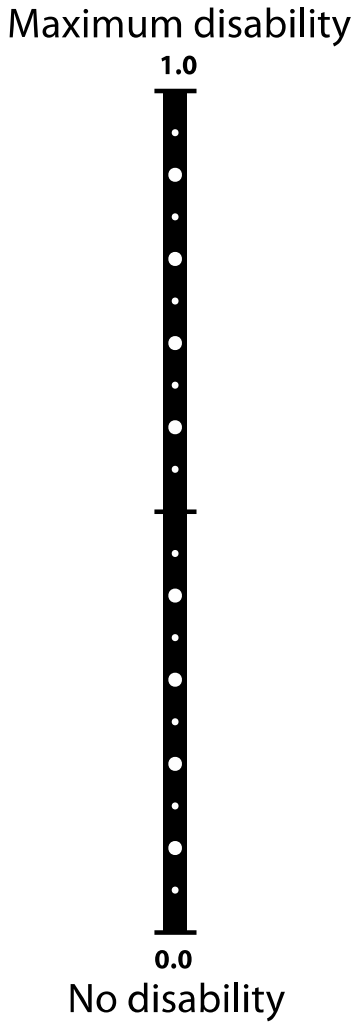
Web (N=2,600)



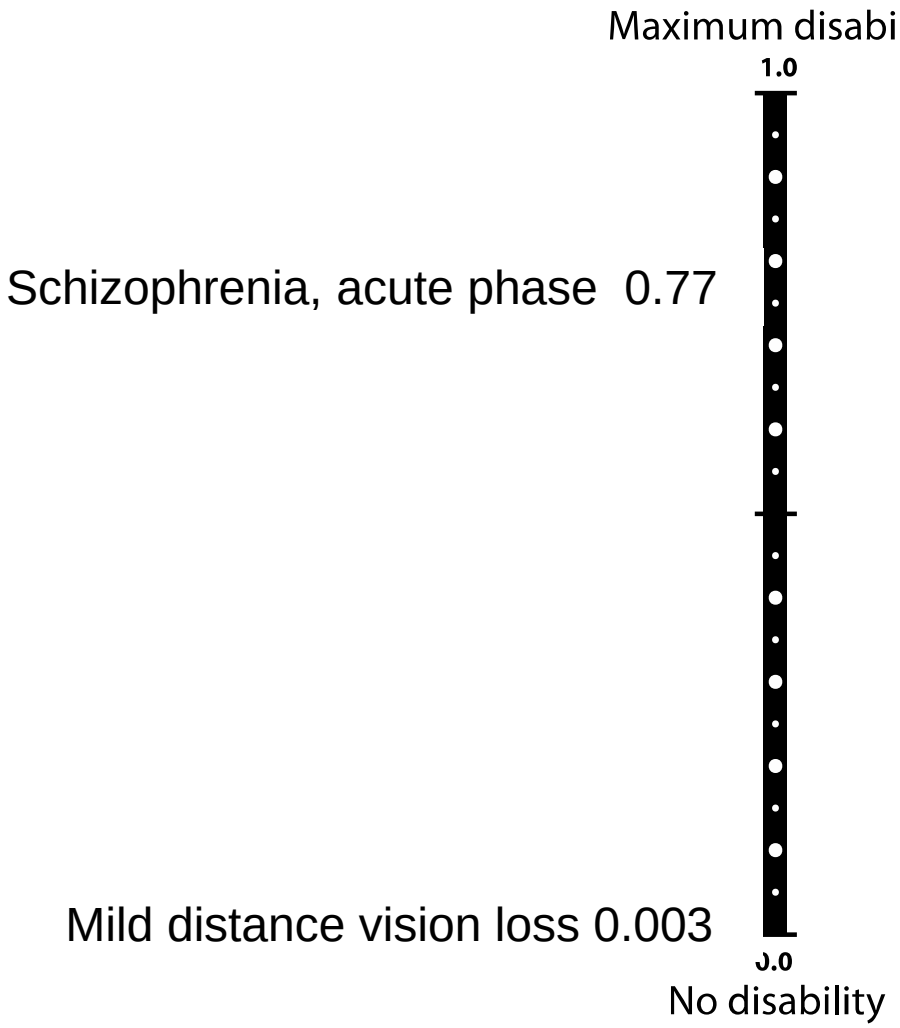
Anchoring pair wise comparison results using PHE questions

- Pair-wise comparisons provide information on the relative position of one health state against another
- We need additional information to ‘anchor’ all results on the 0-1 scale from full health to ‘full loss of health’, i.e. equivalence of being dead
- Population health equivalence questions for a subset of health states across continuum from very mild to very severe

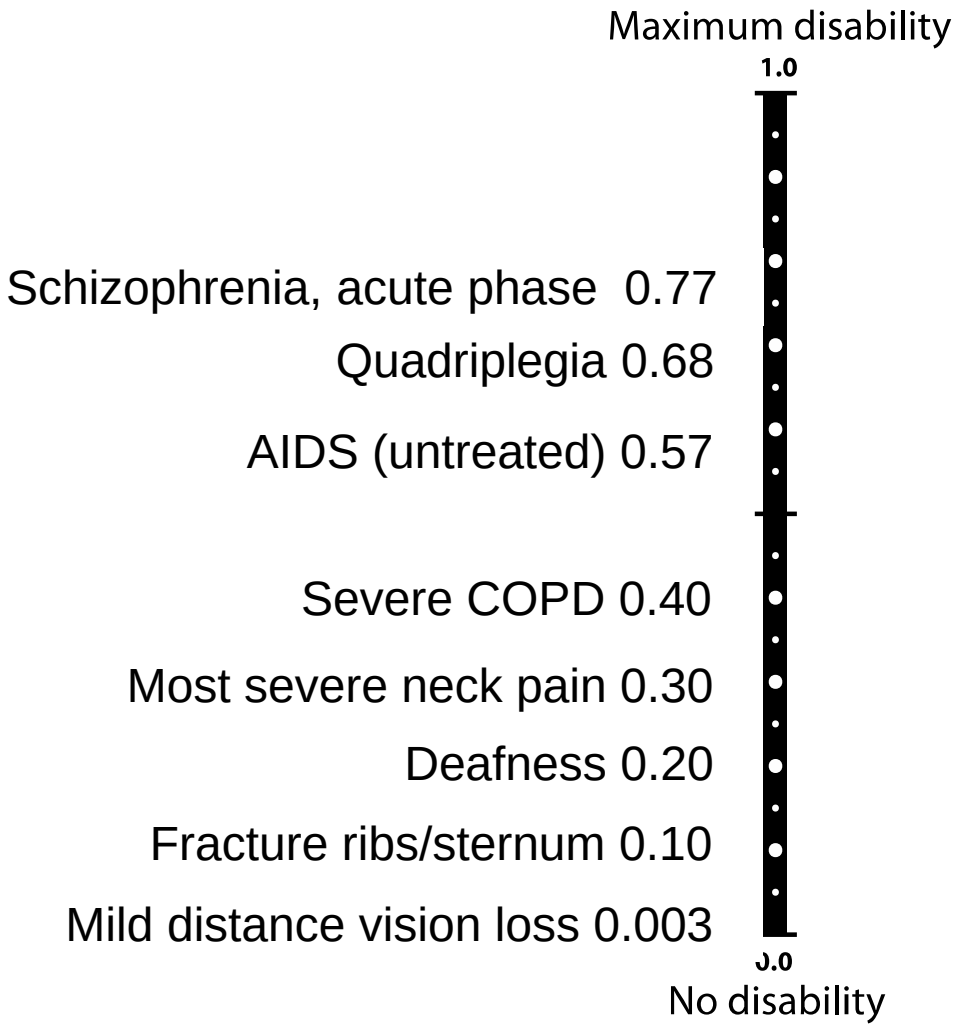
Results



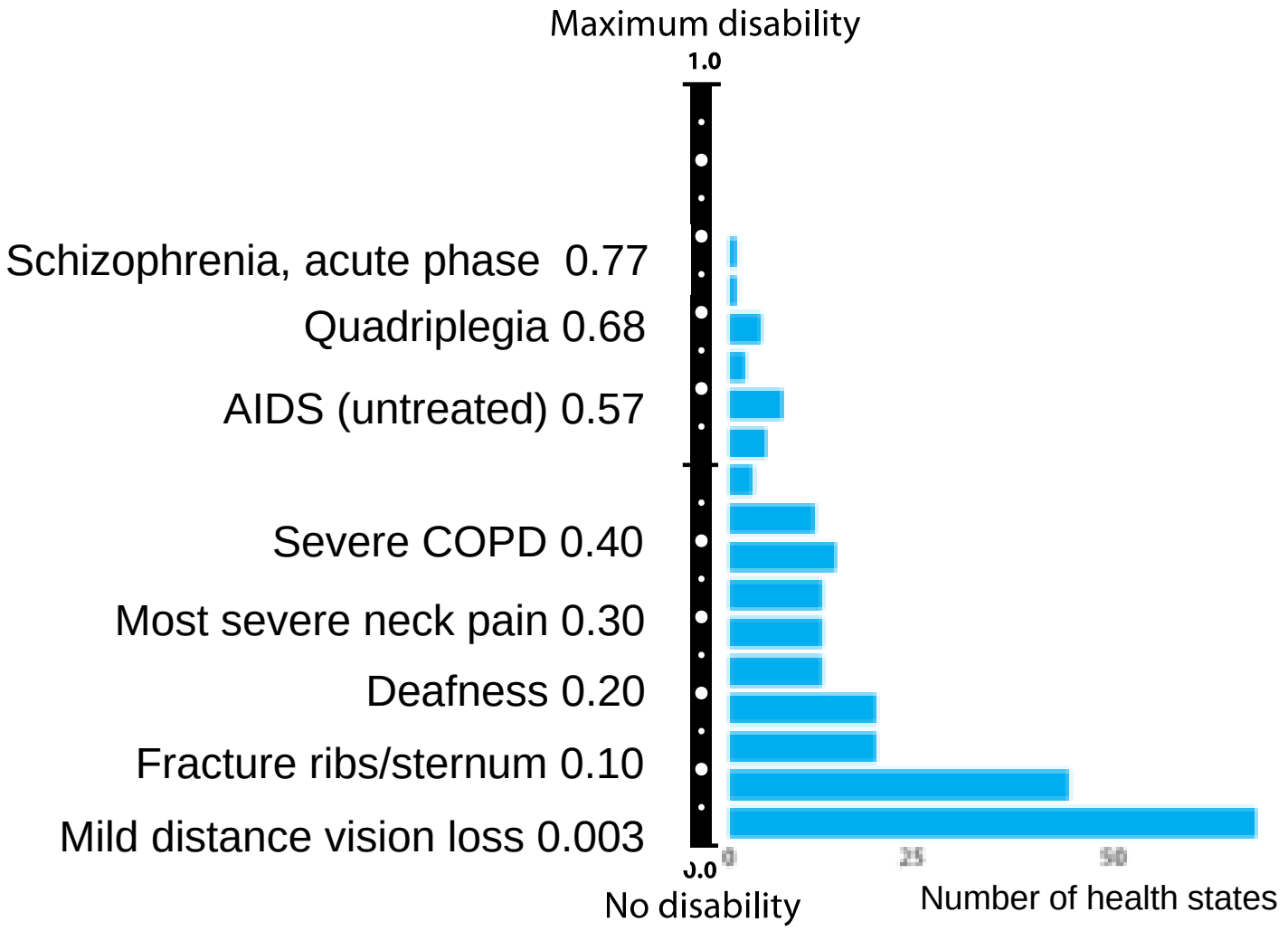
Results: new disability weights



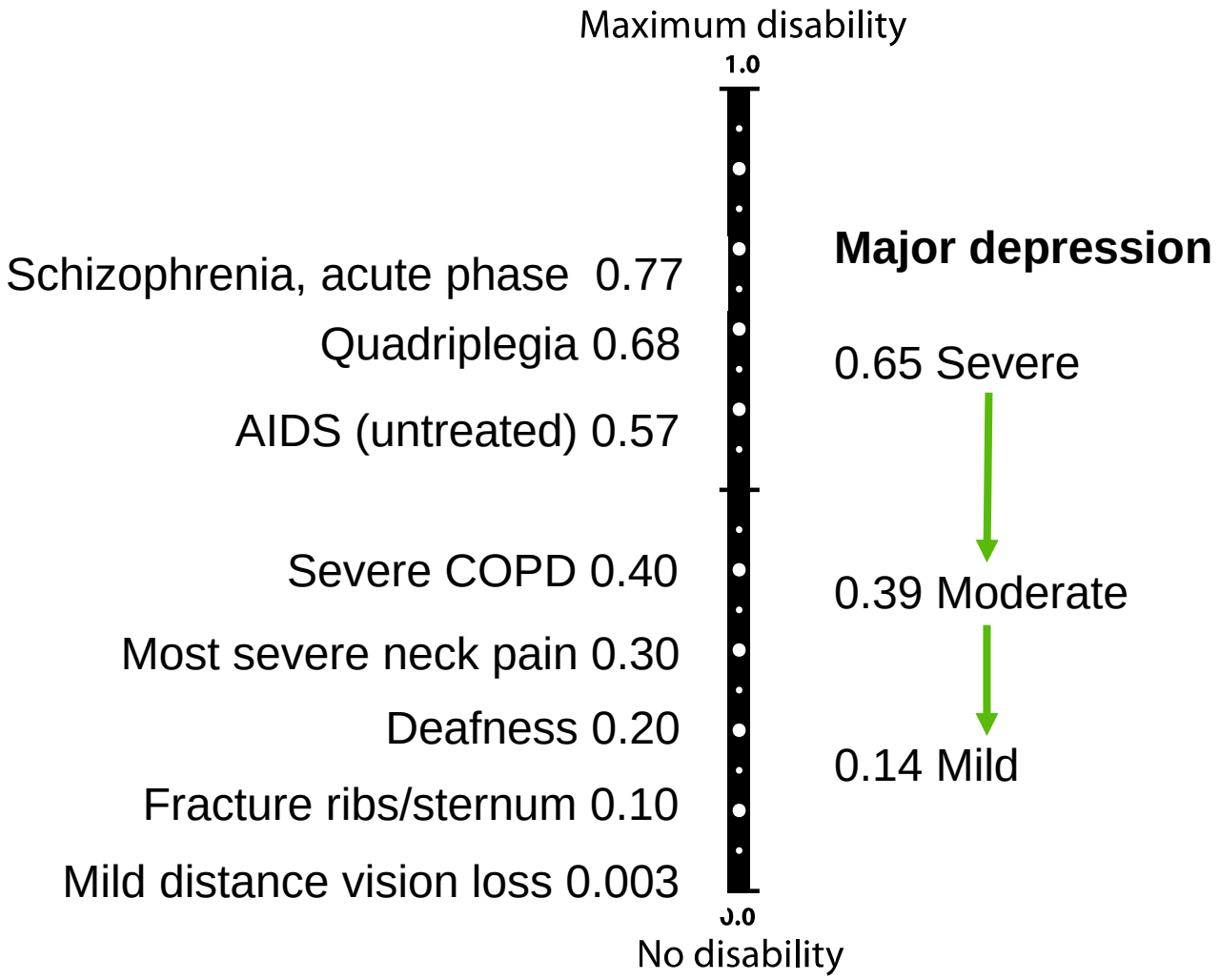
Results: new disability weights



Results: new disability weights



Results: new disability weights



Comparison GBD2010 and Euro surveys

Overall similar congruence of values between countries and between EURO survey and GBD survey results

Most values for same health states similar but not for some:

- Fractures got lower values
- Lower DW for severe infection

Alternate health states all behaved as ‘expected’:

- Higher for hearing loss
- Higher for spinal cord lesion with incontinence

New health state DWs have face validity and where part of a severity hierarchy make sense

Recent survey in Japan

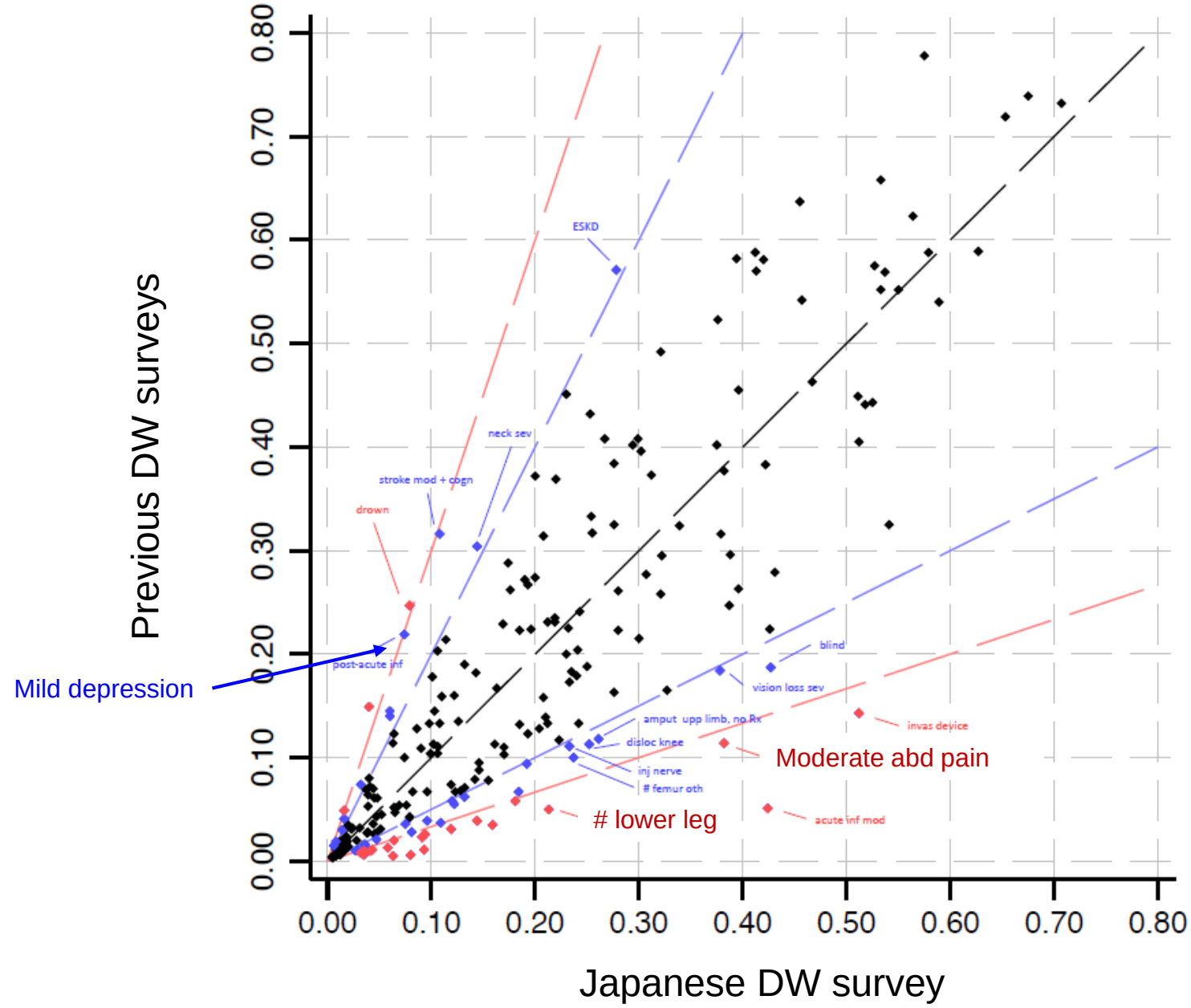
Sample size 37,318 (compared to 60,890 of 10 previous surveys)

Same methods, a few altered lay descriptions

Considerable variation in results with previous surveys

- Health states with pain and sensory loss got higher values
- Lower DWs for mention of mental and substance use symptoms

First time to find such large variation in health state valuations


Previous DW surveys
Japanese DW survey
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
ESKD
neck sev
stroke mod + cogn
drown
post-acute inf
blind
vision loss sev
amput upp limb, no Rx
invas device
dislocknee
inj nerve
femur oth
acute inf mod
Mild depression
Moderate abd pain
lower leg

Significance

Largest empirical effort to date to measure weights for health outcomes across range of populations shows:

- Feasible to collect this sort of information in virtually any population
- Simple data collection tools can be combined with straightforward analytic techniques to yield meaningful weights
- Weights appear highly consistent across diverse cultural settings and respondent characteristics …. but not in recent Japanese survey ….

Future strategy

- IHME will continue to seek opportunities to expand survey data …but difficult to get funding ….
- Currently, surveys in Poland (?) and China (at analysis stage) underway
- Ongoing research effort:
  - Impact of wording of lay descriptions on valuations
  - New health states
  - Get direct observations on DW for combined impairments
  - Alternative formulations of population health equivalence questions
  - Further explore cultural variation